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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LUU, THANH X	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/070,153	SASGES ET AL.
	Examiner	Art Unit
	Thanh X. Luu	2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 29, 2005 has been entered.

Claims 1-8 and 10-41 are currently pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 10, it is unclear how a radiation collector having a polygonal cross-section also has a generally circular cross-section. That is, the dependent claim conflicts with the independent claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 32-35, 39 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by the publication of Kaas (WO 99/37978, published July 29, 1999).

Regarding claims 32-35, 39 and 41, Kaas discloses (see Figs. 1 and 7) an ultraviolet (UV) water treatment system, comprising: an array of UV radiation sources (7) configured to generate a field of UV radiation in the water to be treated, the sources further comprising: a radiation sensor device (10) configured to detect UV radiation in the field of radiation, the sensor device comprising: a radiation collector (10) configured to (i) receive UV radiation from a predefined arc around the collector within the field of radiation and (ii) redirect the received radiation along a predefined pathway (onto 3, then into 1); and a sensor element (6) configured to detect and respond to radiation along the pathway incident on the sensor element. In addition, Kaas discloses (see Fig. 1) the radiation collector is remote from the sensor element and a generally circular cross-section.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-4, 7, 8, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaas.

Regarding claims 1-4, 8 and 40, Kaas discloses (see Figs. 1 and 7) a water treatment ultraviolet (UV) radiation sensor device for detecting UV radiation from a plurality of submerged UV radiation sources (7) disposed in a predefined arc around the sensor device in a radiation field, comprising: a radiation collector (10) configured to (i) receive UV radiation from the UV radiation sources and (ii) redirect the received radiation along a predefined pathway (onto 3, then into 1); and a sensor element (6) configured to detect and respond to radiation along the pathway incident on the sensor element. In addition, Kaas discloses (see Fig. 1) the radiation collector is remote from the sensor element. Kaas does not specifically disclose that the radiation collector has a polygonal cross-section. However, choosing the cross-sectional shape of the radiation collector is a matter of design choice and requires only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a radiation collector having a polygonal cross-section in the apparatus of Kaas to obtain a more resilient or easier to clean collector structure, as desired.

Regarding claims 7 and 38, Kaas discloses the claimed invention as set forth above. Kaas does not specifically disclose the collector directly mounted to the sensor element as claimed. However, choosing such a configuration is a matter of design choice and would require only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a direct configuration in the apparatus of Kaas to improve detection by reducing light loss by eliminating indirect coupling or to provide a more compact configuration.

8. Claims 11-15, 18-25 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaas in view of Kurtz et al. (U.S. Patent 5,660,719).

Regarding claims 11-15, 19-25 and 29-31, Kaas discloses the claimed invention as set forth above. Kaas does not specifically disclose a frame having a support member as claimed. Furthermore, Kurtz et al. teach (see Fig. 2) a similar device having a frame or protecting sleeve having a first support member for the radiation source and sensor device as claimed. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a frame in the apparatus of Kaas in view of Kurtz et al. to more easily clean or replace of the parts of the device.

Regarding claims 18 and 28, Kaas in view of Kurtz et al. disclose the claimed invention as set forth above. Kaas and Kurtz et al. do not specifically disclose the collector directly mounted to the sensor element as claimed. However, choosing such a configuration is a matter of design choice and would require only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a direct configuration in the apparatus of Kaas in view of Kurtz et al. to improve detection by reducing light loss by eliminating indirect coupling or to provide a more compact configuration.

9. Claims 1-4, 6-8, 11-15, 17-25, 27-35, 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtz et al. in view of Horstmann (DE 2518164).

Regarding claims 11-17, 19, 21, 22-25, 27, 29, 31-35, 37, 39 and 41, Kurtz et al. disclose (see Fig. 2) a water treatment UV radiation sensor device for detecting UV

radiation from a plurality of submerged UV radiation sources (20) disposed in a predefined arc around the sensor device in a radiation field, comprising: a sensor element (112) configured to detect and respond to radiation along the pathway incident on the sensor element. Kurtz et al. also disclose (see Fig. 2) a frame or protecting sleeve having a first support member and at least one radiation source assembly in engagement with the first support member. Kurtz et al. further disclose (see Fig. 2) at least one UV source disposed within a protective sleeve (22). The predefined arc comprising the arcs or partial arcs as claimed. The sensor element of Kurtz et al. appears to be enclosed and coupled to a radiation collector (curved end of tube), however the radiation collector is not explicitly or specifically described. Horstmann teach in a UV treatment device (see Figs.) a radiation collector (5) configured to (i) receive UV radiation from the UV radiation sources (2) and (ii) redirect the received radiation along a predefined pathway (6) to a sensor element. Horstmann further recognize (see abstract) that such a collector provides detection from all sides. Horstmann also disclose (see abstract) the collector (27) having a generally convex (spherical) with a reflective surface (mirror finish surface) to direct the radiation along the pathway, the sensor is mounted remote (see Figs.) from the collector, and the collector has a circular cross-section. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a collector in the apparatus of Kurtz et al. in view of Horstmann to more effectively collect radiation from all sides and obtain improved detection as taught.

Regarding claims 1-5, 8, 20, 30 and 40, Kurtz et al. in view of Horstmann discloses the claimed invention as set forth above. Kurtz et al. and Horstmann do not specifically disclose the collector having a polygonal cross-section. However, choosing the cross-sectional shape of the radiation collector is a matter of design choice and requires only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a radiation collector having a polygonal cross-section in the apparatus of Kurtz et al. in view of Horstmann to obtain as desired.

Regarding claims 7, 18, 28 and 38, Kurtz et al. (see Fig. 2) appears to show the sensor directly mounted to the collector (end of tube), but it is not explicitly or specifically disclosed. However, directly mounting a sensor to a radiation collector is notoriously well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a mounting configuration in the apparatus of Kurtz et al. in view of Horstmann to reduce radiation losses between indirect couplings and improve detection.

10. Claims 1-8 and 11-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtz et al. in view of Ebel et al. (U.S. Patent 6,592,816).

Regarding claims 1-6, 8 and 11-17, 19-27, 29-37 and 39-41, Kurtz et al. disclose (see Fig. 2) a water treatment UV radiation sensor device for detecting UV radiation from a plurality of submerged UV radiation sources (20) disposed in a predefined arc around the sensor device in a radiation field, comprising: a sensor element (112) configured to detect and respond to radiation along the pathway incident on the sensor

element. Kurtz et al. also disclose (see Fig. 2) a frame or protecting sleeve having a first support member and at least one radiation source assembly in engagement with the first support member. Kurtz et al. further disclose (see Fig. 2) at least one UV source disposed within a protective sleeve (22). The predefined arc comprising the arcs or partial arcs as claimed. The sensor element of Kurtz et al. appears to be enclosed and coupled to a radiation collector (curved end of tube), however the radiation collector is not explicitly or specifically described. Ebel et al. teach in a UV treatment device (see Fig. 2) a radiation collector (27) configured to (i) receive UV radiation from the UV radiation sources (21, 22) and (ii) redirect the received radiation along a predefined pathway (30) to a sensor element. Ebel et al. further recognize (see col. 4, lines 54-55) that such a collector provides for a large field of view for collecting radiation. Ebel et al. also disclose (see Fig. 2) the collector (27) having a generally convex (spherical part) or concave (indentation in sphere) with a reflective surface (inside sphere) to direct the radiation along the pathway, the sensor is mounted remote from the collector, and the collector has a polygonal or circular cross-section. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a collector in the apparatus of Kurtz et al. in view of Ebel et al. to more effectively collect radiation from a large field of view and obtain improved detection.

Regarding claims 7, 18, 28 and 38, Kurtz et al. (see Fig. 2) appears to show the sensor directly mounted to the collector (end of tube), but it is not explicitly or specifically disclosed. However, directly mounting a sensor to a radiation collector is notoriously well known. It would have been obvious to a person of ordinary skill in the

art at the time the invention was made to provide such a mounting configuration in the apparatus of Kurtz et al. in view of Ebel et al. to reduce radiation losses between indirect couplings and improve detection.

Response to Arguments

11. Applicant's arguments with respect to the claims over Kaas have been considered but are moot in view of the new ground(s) of rejection.

12. In response to applicant's argument that Ebel is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Ebel's invention is also in the Applicant's field of endeavor as multiple UV radiation sources are used in a treatment system. Furthermore, Ebel's invention is also concerned with monitoring multiple UV radiation sources disposed in an arc as in Applicant's invention.

13. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA

1971).

Thus, as set forth above, this rejection is proper.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thanh X Luu
Primary Examiner
Art Unit 2878

07/2005